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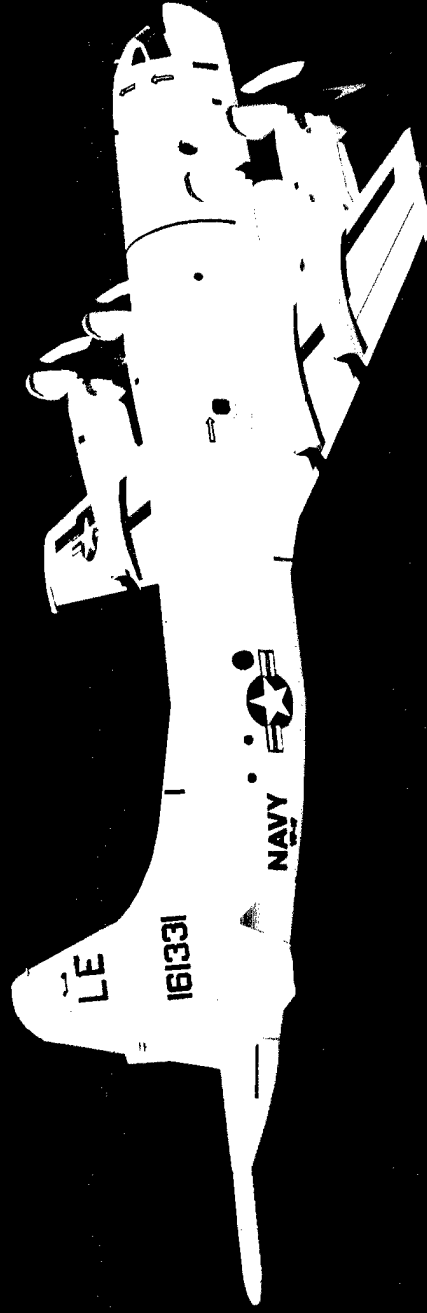
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LARIAT

LOW-COST AIRBORNE RECONNAISSANCE IMAGERY ANALYSIS TOOL



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NAVAL AVIATION SYSTEMS TEAM
Research & Engineering
4.5 Avionics
THE PULSE OF NAVY 4.5/3/04

RESEARCH &
ENGINEERING





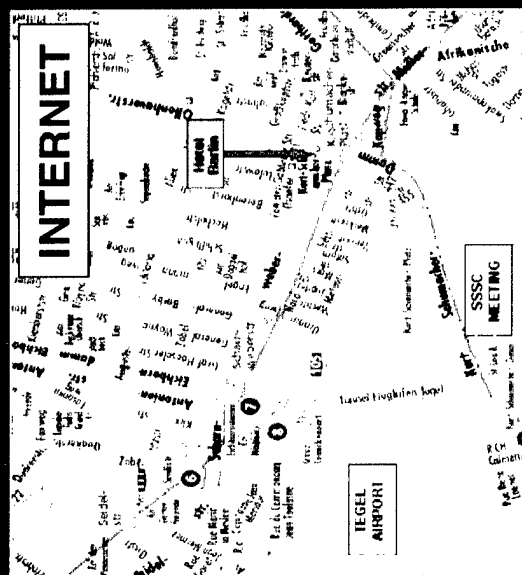
COMMERCIAL & GOVERNMENT OTS SOFTWARE

OpenELT Analyst (PC) Integrator (UNIX)
FalconView (PC)
ELT3500 (PC)
Quad Companion (PC)
SAR ToolBox (UNIX)
PhotoEditor (PC)
PowerPoint (PC)

LARIAT

MAPS FROM ANY SOURCE

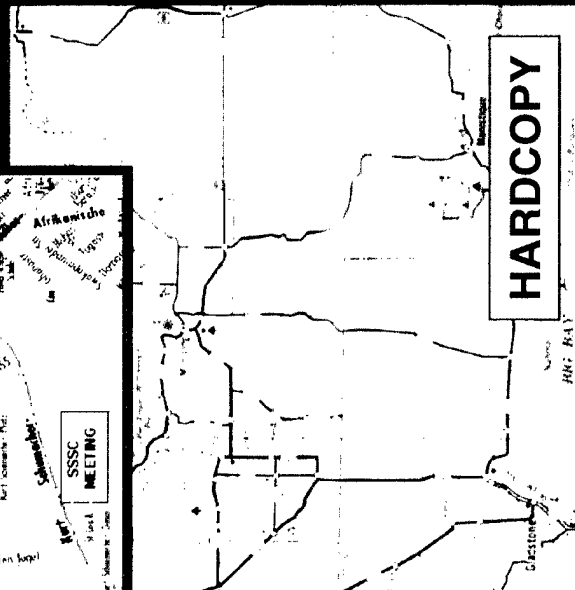
USGS QUADRANGLE MAPS



INTERNET



NIMA PRODUCT FORMATS



HARDCOPY

LARIAT

PRODUCT WORKFLOW

PDEM + TOPO MERGED

FUSION DATA TARGET PRODUCT

PRECISION DEM
TOPOGRAPHIC QUAD
LANDSAT CHANNELS 543
LANDSAT CHANNELS 321



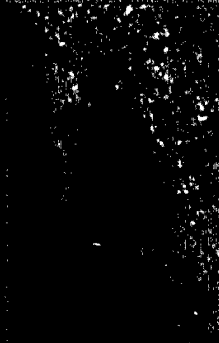
OPTECH PRECISION DEM



USGS TOPOGRAPHIC QUAD

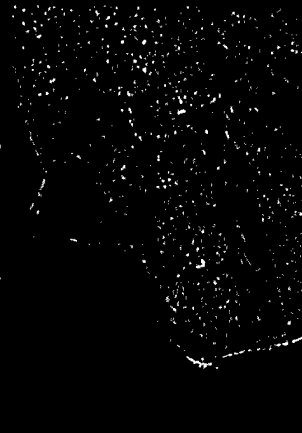


LANDSAT (RGB = 543)



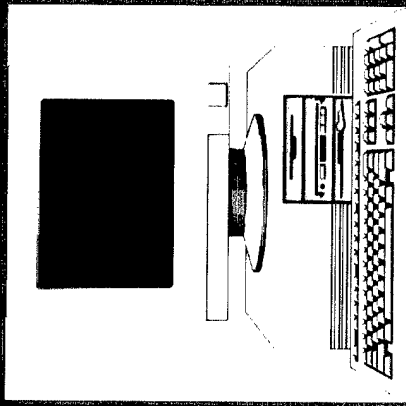
LANDSAT (RGB = 321)

LANDSAT (543 + 321) MERGED



FROM BEST AVAILABLE SOURCES

LARIAT - PREMISSION PLANNING



PC WORKSTATION PROCESSING

WINDOWS - PC

768 MB RAM

PENTIUM II CPU

50+ GB DISC

FALCONVIEW or ELT3500

MISSION PLANNING

GEOGRAPHIC ANALYSIS

DISTANCE & AREA MEASURE

SUPPORT NP-3 SAR COLLECTION

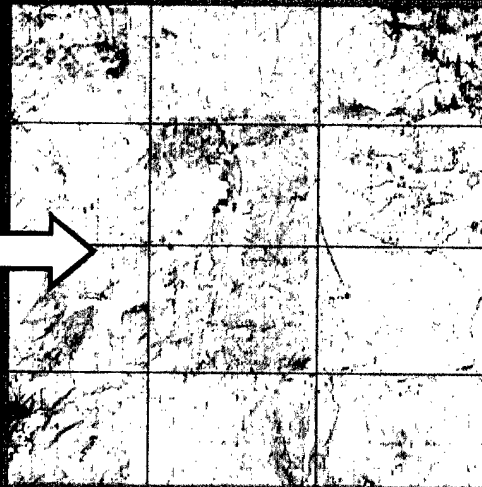


QUAD COMPANION

LARGE AREA MOSAICS

FROM LARGE SCALE

TOPOGRAPHIC MAPS



400 SQ NM MOSAIC

IMAGE GEOCODING

LATITUDE: 38°27'34"N

LONGITUDE: 76°02'45"W



NAVAL AVIATION SYSTEMS TEAM
Research & Engineering
4.5 Avionics
THE PULSE OF NAVIGATION

LARIAT

RESEARCH &
ENGINEERING

MTOOL (MOSAIC TOOL)

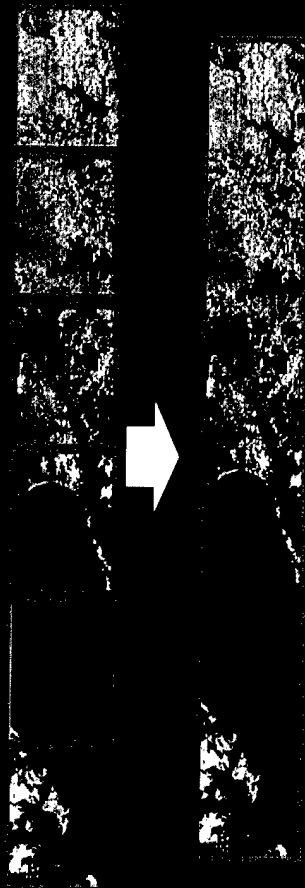
FORMAT CONVERSION



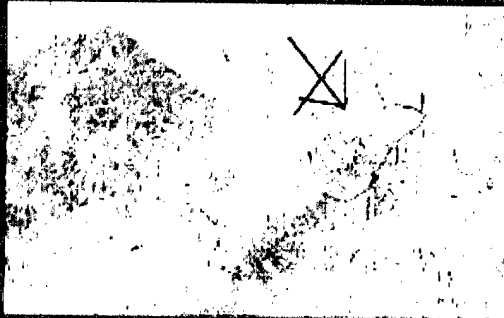
TIF → PYRAMID



TIES IMAGE SEGMENTS TO STRIPS



MOSAIC BUILDING



RECTIFICATION, ROTATION,
SCALING AND SUPERPOSITION

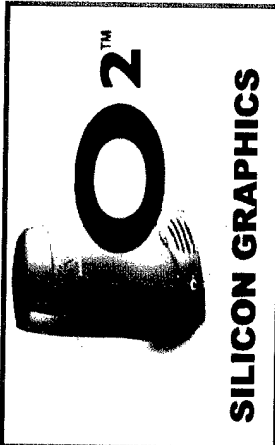
UNIX WORKSTATION

1.0 G

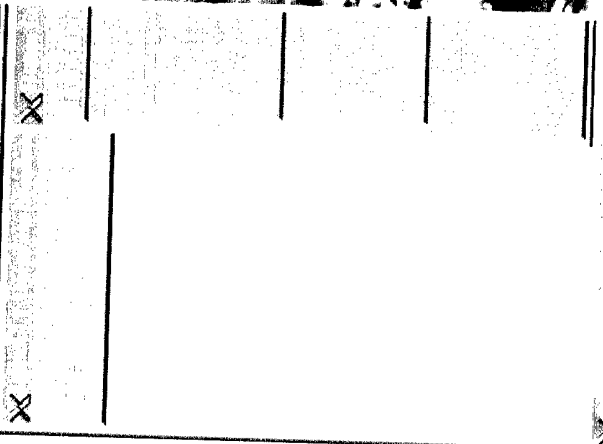
180 F

36 G

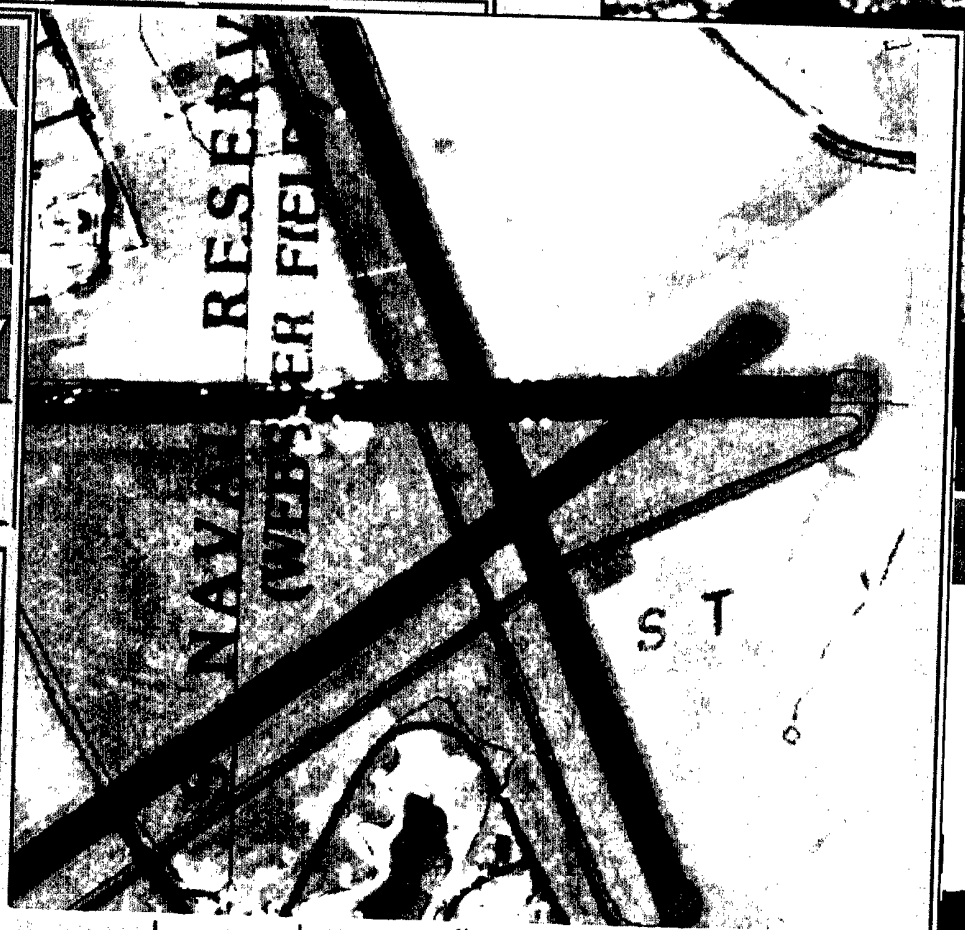
WINDOWS NT4.0 SINCE MAY 2000



OpenELT

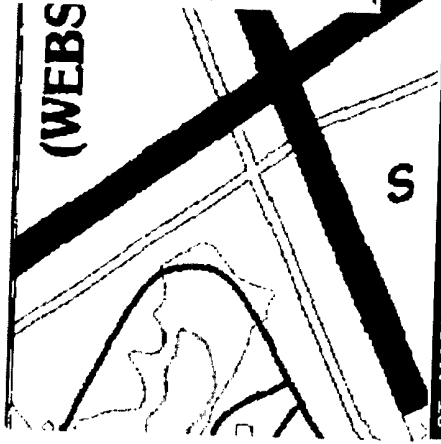


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NAVAJOS RESERV
(WEBSTER FIELD)

S T

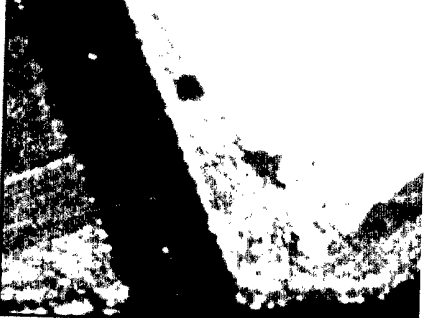


(WEBS

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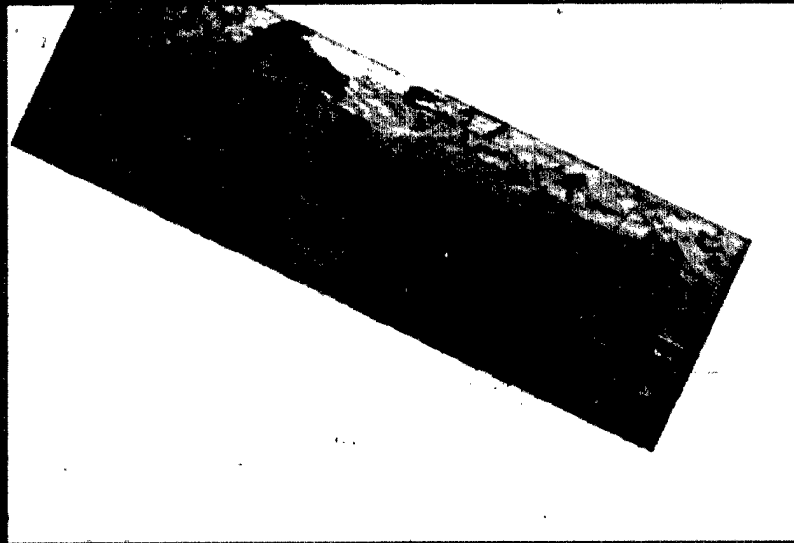
ST_MARYS_MOSAIC\Topo Quads\St_Marys_Mosaic.ms (12769)

Controls



LARIAT

RECTIFICATION, SCALING
& ROTATION



TERRAIN & CULTURE ANALYSIS



L-BAND SAR IMAGE MERGED WITH TOPOGRAPHY

INTERACTIVE DATA FUSION ANALYSIS TOOLS

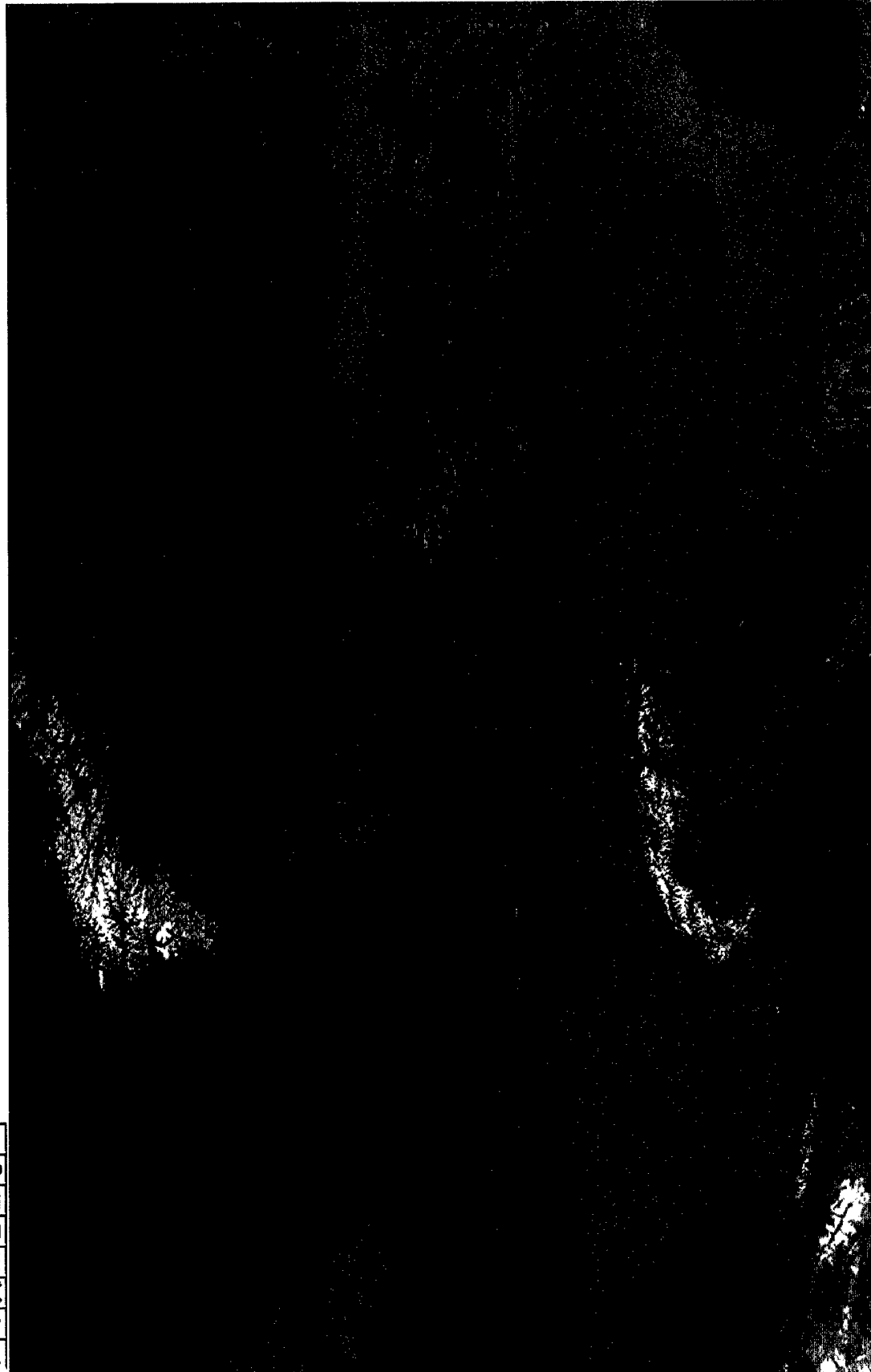
APY-6 SAR IMAGERY MERGED TO NAWCAD L-BAND MOSAIC

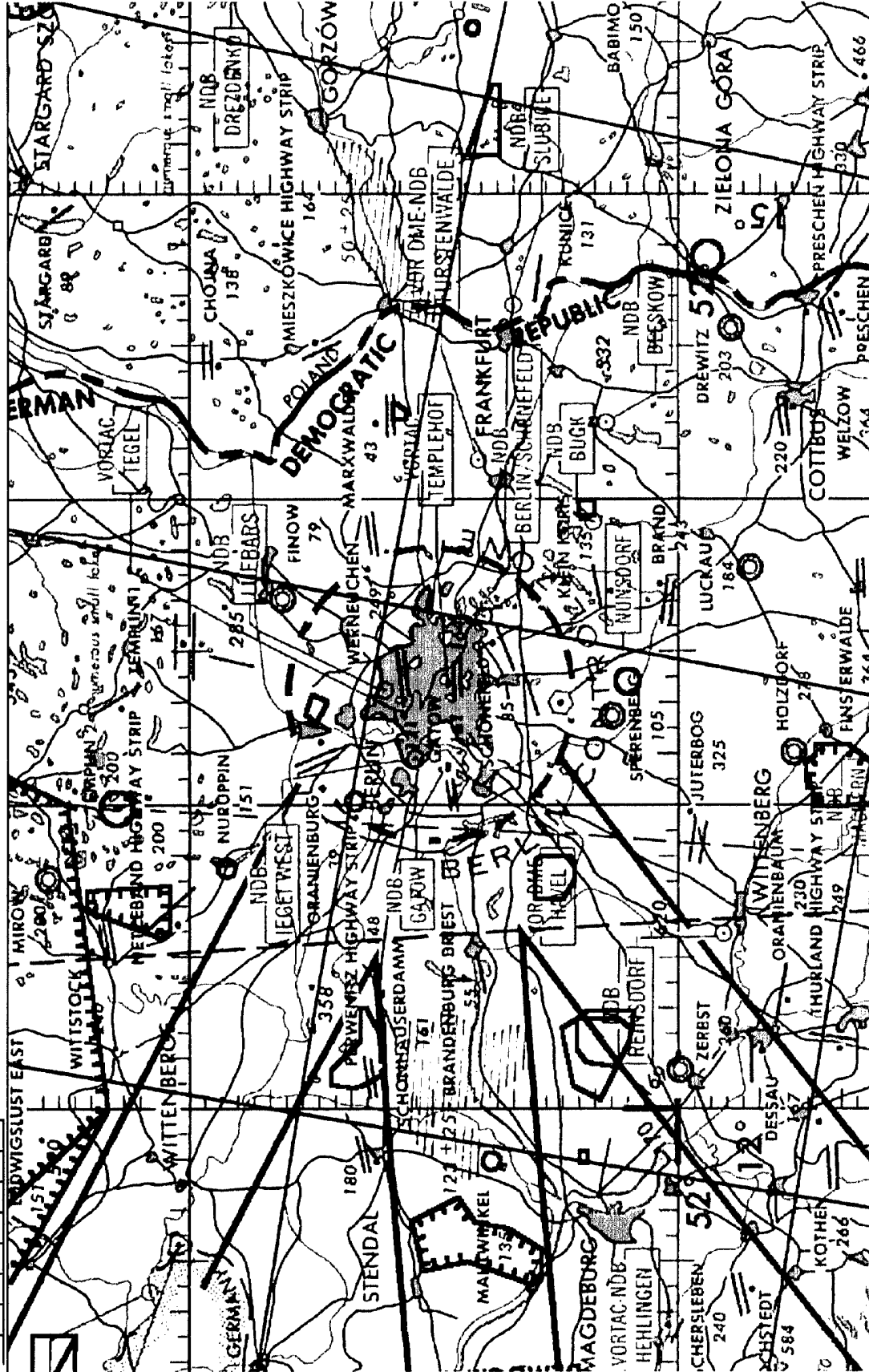
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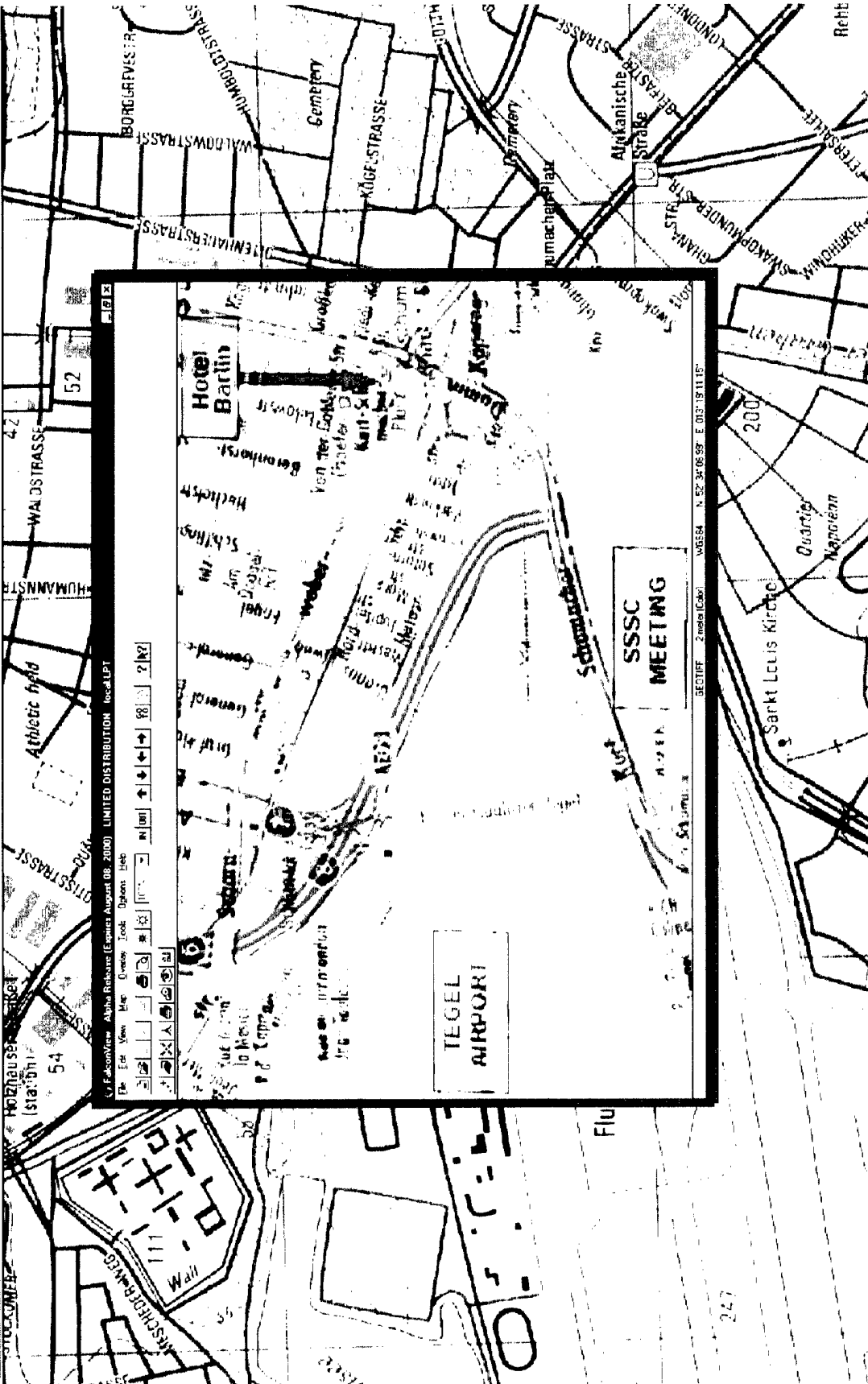


RESEARCH &
ENGINEERING

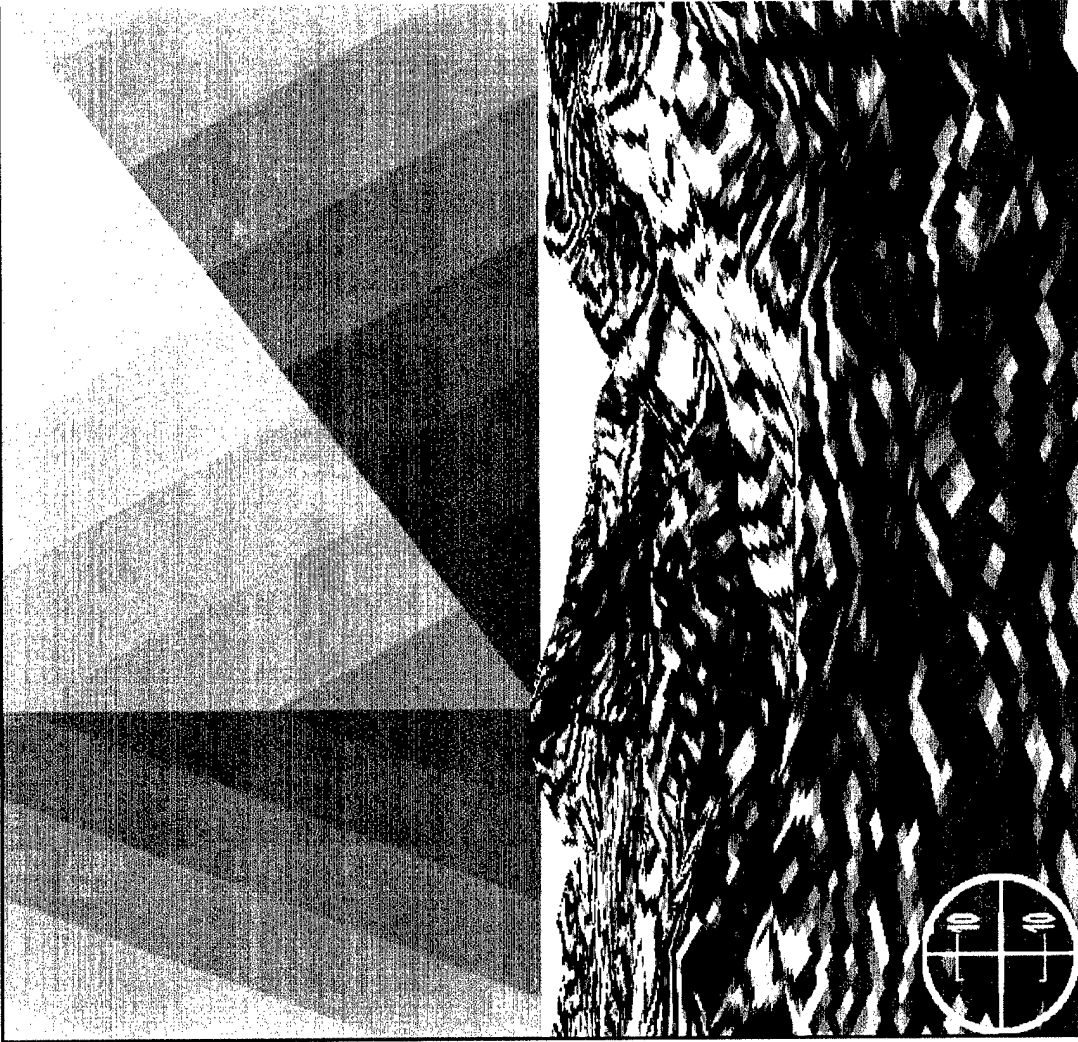








FALCONVIEW 3.1.1 PROVIDES SKYVIEW 3-D TERRAIN DISPLAY



0 knots N 44° 04' 17.2" W 071° 17' 08.88" 324°(T) 336°(M) 3172 ft AGL 3942 ft MSL



WGS84 N 44° 11' 23" W 071° 16' 58"

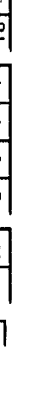


FalconView - Alpha Release

File Edit View Map Overlay



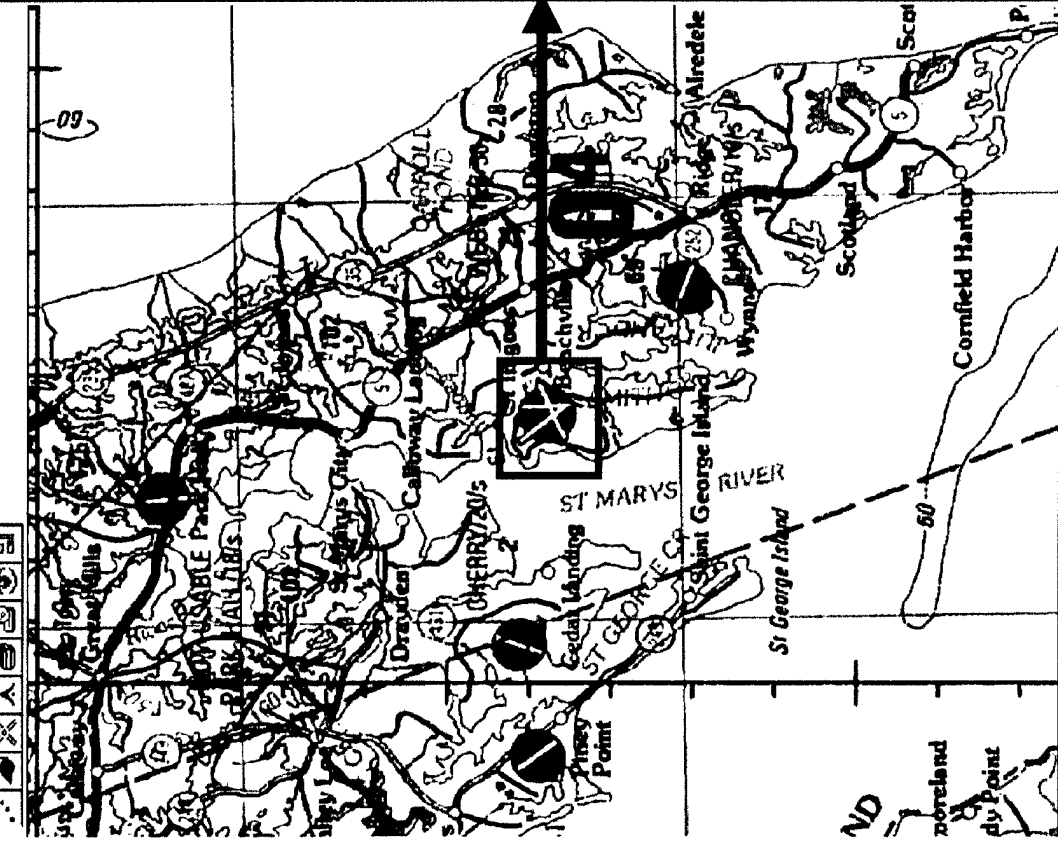
100% IN OUT



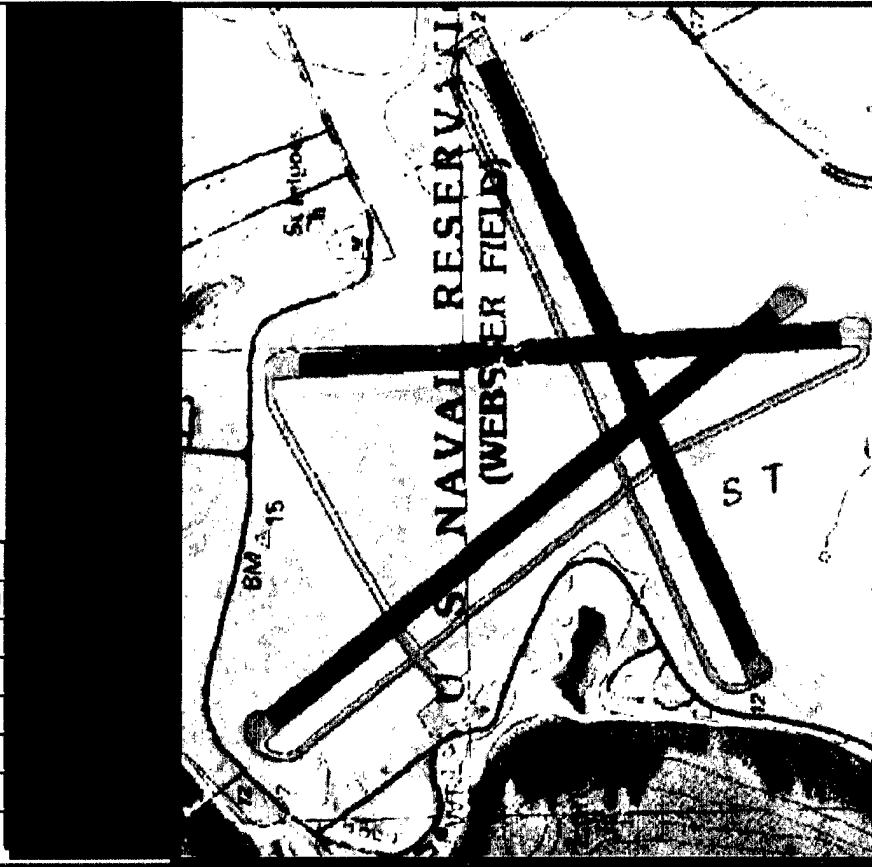
FALCONVIEW 3.2.0 PROVIDES GEOTIFF IMAGE DISPLAY

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90 100 110 120 130 140 150 160 170 180 190 200



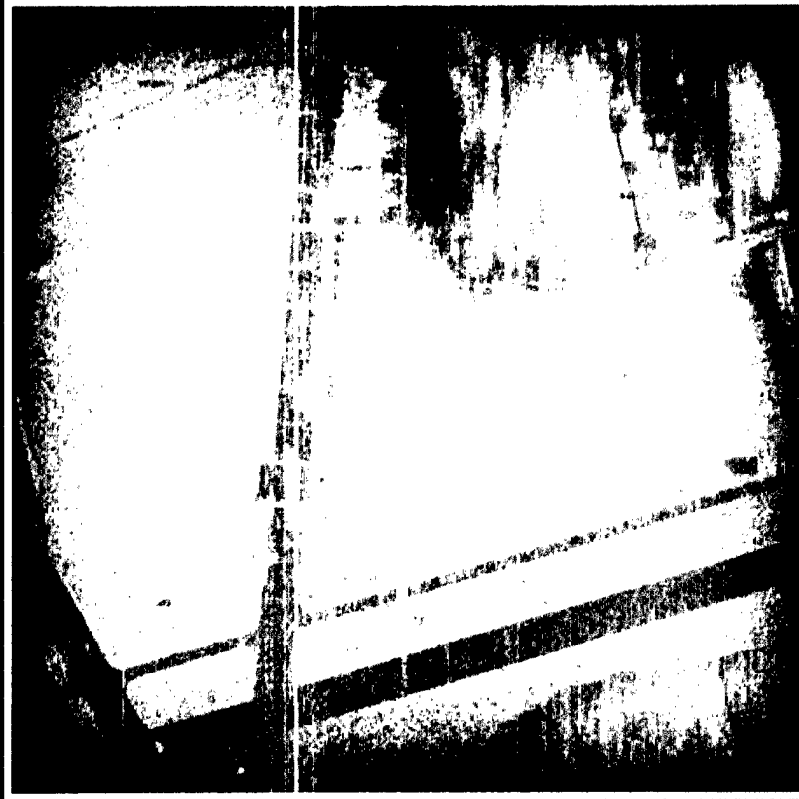
CADRG 1:250 K (JOG) WGS84 N 38° 13' 31" W 076° 19' 55"



GEOTIFF 1:24 K WGS84 N 38° 09' 22.2" W 076° 26' 15.8"

LARIAT

Imagery Enhancement (OpenELT)



Raw Image File

Warp to Groundplane (North Up)
Brightness/Contrast Adjustment
Priority Exploitation Display Format
Tonal Transfer Curves



LARIAT Processed

LARIAT

LOW COST AIRBORNE RECONNAISSANCE IMAGERY ANALYSIS TOOL

HIGH PERFORMANCE DATA FUSION

WARP, MERGE, SCALE, RECTIFY IMAGES TO MAPS

GEOCODING

IMAGE ENHANCEMENT

INTEROPERABILITY

WINDOWS PC OPERATING SYSTEM

COTS AND GOTS SOFTWARE

PORTABILITY

PC LAPTOPS

PC WORKSTATIONS

SUPPORT THE NAVY VISION FOR NETWORK CENTRIC WARFARE